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ABSTRACT

The specification in concrete behavioral terms of theoretical constructs is one difficulty associated with behavioral assessment. For example, the construct of heterosocial skill has not been successfully defined in operational terms. A linear modeling technique was used to identify valid behavioral referents of heterosocial skill ratings for both men and women. Videotapes of heterosocial interactions of male (N=30) and female (N=30) university students representing a wide range of scores on the Social Avoidance and Distress Scale were rated by untrained peers (N=67), who then supplied lists of the behavioral cues they considered most useful in discriminating skill levels. The rate of occurrence of the most widely endorsed cues were scored for the videotaped subjects and used to construct linear models of the heterosocial skill ratings. Valid behavioral referents of molar heterosocial skill ratings were identified for both men and women. Men rated by female peers as high in heterosocial skill gazed upward, asked questions, and used appropriate hand gestures during conversations. Women rated by male peers as high in heterosocial skill also gazed upward, made eye contact, and avoided speaking too quietly. The findings suggest that the experimental method employed is able to identify behavioral referents of reliable peer ratings of molar heterosocial skills. (NRB)

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PEER RATINGS OF HETEROSOCIAL SKILL: COMPONENTS ANALYSIS FOR MEN AND FOR WOMEN

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Peer Ratings of Heterosocial Skill: Components Analysis for Men and for Women

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Perhaps the most difficult task of behavioral assessment is the specification in concrete behavioral terms of the trait-like constructs of theorists and goals of clients. As Mischel (1978) recently put it, "The challenge for the behavior therapist to to transform those goals into operational terms, finding specific behavioral referents even for subtle, global personal constructs" (p. 33). The success of both behavioral research and behavioral intervention is dependent on the ability to specify assessment measures in this way, and successes there have certainly been: the benefits of the definition of anxiety in terms of physiological measures and avoidance/excape behavior rather than in terms of global self-reports is perhaps a prime example.

The widely used construct of heterosocial skill has been less successfully defined. While the use of this term serves the good purpose of focusing on behavior rather than on the inferred personal qualities implied by trait labels (for example, "social skills deficit" rather than "shy" or "inhibited"), the term must be operationally defined in terms of specific, concrete component behaviors if it is to be of much use to the researcher or the clinician. This problem has been recognized in a number of recent reviews (Galassi & Galassi, 1979; Curran, 1979; Bellack, 1979a). Most studies attempting to specify the molecular components of heterosocial skill have analyzed a small number of responses, selected on the basis of presumed face validity, in analogue interactions of subjects selected to represent extremes of the molar heterosocial skill dimension. The results of these investigations consistently show differences between the contrasted groups (for example, high frequency daters versus low frequency daters) on subjective, molar social skill ratings, but consistent differences on molecular skill components (for example, eye contact, speech disfluencies) have eluded detection (Arkowitz, 1977). As Curran (1979) put it, "The definitional problem most succinctly stated is that everyone seems to know what good and poor social skills are, but no one can define them adequately" (p. 320).

One problem with the research on heterosocial skill reported thus far is the reliance on face validity, rather than on empirical criteria, in the selection of which molecular skill components to measure. Since observers are able to make valid molar ratings of heterosocial skill, a more profitable strategy might be to

analyze this rating process to identify the behavioral referents used by the raters (Hersen & Bellack, 1977). A methodology for just this sort of task has been developed and used extensively by investigators of human judgment processes. This strategy uses multiple regression analysis to construct linear models of the cues used by raters (Hoffman, 1960). Uses of this technique for behavioral assessment are illustrated by Bayes (1972), who successfully used this method to establish the validity of behavioral referents of the construct interpersonal warmth, and Royce and Weiss (1975), who used a similar procedure to identify and validate behavioral cues used by raters of marital satisfaction/distress. Quite recently, Romano and Bellack (1980) applied this strategy to the investigation of components of assertive behavior in women. They were able to identify molecular cues which accounted for a substantial portion of the variance in molar social skill ratings.

The present study used this linear modeling technique to identify valid behavioral referents of heterosocial skill ratings for both men and women. The method involved the videotaping of heterosocial interactions of male and female subjects representing a wide range of heterosocial skill. The tapes were rated by untrained peers of the target subjects, who then supplied lists of the behavioral cues they believed to be useful in discriminating skillful and unskillful subjects. The rates of occurance of the most widely endorsed cues were then scored for the target subjects and used to construct linear models of the heterosocial skill ratings. The components of these models should then represent the behavioral referents of the construct heterosocial skill as used by the peer raters.

This methodology differs from that of most earlier studies in the area in several important ways. First, male and female subjects were investigated together so that sex differences could be evaluated. Second, the investigator's a priori notions of what behavior ought to be components of heterosocial skill were ignored completely; peer raters nominated the cues to be investigated. Third, molar ratings of heterosocial skill were made by a number of peers of the target subjects, which should result in ratings with greater social validity (Bellack, 1979). Fourth, subjects' interactions were with other subjects, not with programmed confederates whose behavior may not adequately represent the natural range of interpersonal behavior. Fifth, relatively large samples of both target subjects and raters were employed in order to minimize the problems of statistical inference inherent in multiple regression analysis. These tactics were meant to overcome the major criticisms made by reviewers of earlier research and should result in less ambiguity in the interpretation of results.

Method

Subjects

The Social Avoidance and Distress Scale (Watson & Friend, 1969) was administered to 197 unmarried university students between the ages of 18 and 22. Some subjects responded to flyers soliciting subjects for the research, but most were recruited by requests made to classroom groups of nursing, business and behavioral science students. From this pool of potential subjects, 30 men and 30 women were selected on the basis of Social Avoidance and Distress Scale scores such that the selected subjects had a nearly rectangular distribution on the Social Avoidance and Distress Scale. This ensured that both extremes of the dimension as well as the middle would be adequately represented in the research sample, which a random selection process would not have done. These subjects were paid $3 for their participation.

A different group of 67 unmarried 18-22 year old students were similarly recruited to observe and rate the target subjects. These women and men were paid $5.

Procedure

Subjects were randomly paired with an opposite-sex subject with whom they were not acquainted and scheduled for video-taping. In separate waiting rooms they received instructions and signed consent forms. They were then brought to the video suite and seated in armchairs placed at a right angle to each other .5 meter apart. Subjects were told to assume that they had just met each other at a student gathering, and that they should get to know each other better. The experimenter then left the room and the videorecording began.

Starting with the experimenter's departure, the subjects' interactions were recorded through a one-way mirror for 10 minutes. The obtained pictures showed both subjects clearly from head to mid-calf. The experimenter interrupted the subjects after 10 minutes and quickly debriefed them.

In phase 2 of the project, the taped interactions were shown to the second group of subjects. Each of these raters viewed and rated five target subjects of the opposite sex, except that raters did not make ratings on subjects with whom they were acquainted. Each target subject was rated by 4-6 raters, and the mean of their ratings constituted the molar social skill rating for each subject. Instructions to the raters described the social skill ratings they were asked to make and that they would be asked to list the behavioral differences among subjects that influenced their ratings. After each interaction was presented, each rater rated the target subject's social skill on a 5 point scale. After viewing five subjects, the raters were asked to list and describe the behavioral cues they had used to make their ratings.

These cues were then examined, categorized and tallied, and the five cues for each sex endorsed by the most raters were selected for further analysis. Trained coders then scored all the target subjects' taped interactions for the rates of occurence of these cues. This procedure thus yielded for each target subject a molar peer rating of social skill in a heterosocial conversation and a profile of suggested behavioral cues of heterosocial skill.

Results

Rating Reliability

Reliability of the molar social skill ratings was computed for each group of raters using the intraclass correlation coefficient. For the female target subjects (male raters), the median reliability coefficient was .84 (range .47-.93). For the male subjects (female raters), the median reliability coefficient was .85 (range .67-.89).

Behavioral Cues Listed by Raters

A total of 36 behavioral cues were suggested by the raters, many being listed by only one or two people. The five cues most widely endorsed for the male subjects and for the female subjects are listed in Table 1, along with the number of raters listing each cue. Only these eight cues were included in the regression analyses. Based on the raters' descriptions, the cues were defined for scoring as follows: Eye Contact--total time of mutual eye contact in seconds. Fidgeting--pulling or scratching at clothes, hair or body; manipulating pens, glasses, chair or other objects. Scored for occurrence in 10 second time samples. Questions--scored once for each interrogation. Too Quiet--difficult or impossible to hear what is said because of low voice level. Scored for occurrence in 10 second time samples. Laughter--laughter of any intensity or duration. Scored once for each occurrence. Initiation--starts conversation; ends a 5 second or longer silence; brings up a new topic of conversation. Scored once for each occurrence. Gestures--hand movements used to illustrate speech. Scored once for each occurrence. Gaze down--gaze is below the horizontal plane longer than two seconds. Scored for occurrence in 10 second time samples.

Using these definitions, trained coders scored each of the 60 target subject's taped conversations for the actual rates of occurrence of the suggested behavioral cues. Median inter-rater reliability on total subject scores for each cue was $r = .95$ (range .63-.99). It was these scores of the subjects' actual rates of the suggested behavioral cues which were used as independent variables in the regression analyses.

Regression Analyses

Separate regerssion equations were constructed for male and for female subjects. Al eight independent variables were used for each analysis, but only five were allowed to enter each equation in forward stepwise inclusion mode. The dependent variables were molar social skill ratings. Table 2 lists for male subjects the cues in order of their entry into the equation. The final R^2 for male subjects was .85, F (5, 24) = 28.1, $p < .01$. Table 3 lists the pertinent regression data for the female subjects. The final R^2 was .57, F (5, 24) = 6.3, $p < .01$. Clearly then, some of the behavioral cues suggested by the raters were valid predictors of the subjects' rated levels of heterosocial skill.

Using these data to construct paramorphic models of raters' cue utilization in rating heterosocial skill, it is apparent that three response classes were important for male subjects. Gaze Down, Questions and Gestures all contributed significantly to these ratings, as the data in Table 2 document. No other cues reliably accounted for the variance in molar heterosocial skill ratings. For female subjects, a different pattern emerged, one in shich less variance could be attributed to the behavioral cues. Gaze Down was the only cue which obtained a significant weighting in this analysis. Eye Contact and Quiet Voice had significant simple correlations with the molar ratings (r = .53 and r = .34, respectively), but since these two dues were correlated with Gaze Down (r =-.63 and r = .40, respectively) they contributed little to the regression equation which already contained the more powerful predictor. Questions, a valid cue of the molar ratings for men, did not even enter the regression equation for women.

Discussion

Valid behavioral referents of molar heterosocial skill ratings were identified for both men and women. Men who were rated by their opposite-sex peers to be high in heterosocial skill were those who kept their gaze up, asked questions, and used appropriate hand gestures in the course of their conversation. These three cues were valid individually as well as in combination with each other. Women who were rated by their opposite-sex peers to be high in heterosocial skill were those who kept their gaze up, made eye contact, and avoided speaking too quietly. While each of these three cues was valid individually, only the first accounted for significant variance when the cues were used in combination.

With one striking exception, the models of cue utilization for both sexes is rather similar. Gaze Down was the most valid cue for both sexes, and Laughter, Fidgeting and Initiation were useless. The status of Gestures, Eye Contact and Too Quiet is ambiguous. The cue that is most clearly gender specific in its

validity is Questions, which was a significant predictor of heterosocial skill ratings for men, but which did not even enter the equation for women. Apparently, asking questions in this type of situation is more appropriate for men than for women.

It is difficult to compare these results to those from other studies that have sought to identify components of heterosocial skill because of differences in the situations sampled, in the definitions of molar heterosocial skill used as criteria, and in the definitions of component responses. For example, one investigator's "initiation" may be rather different from another's. Nevertheless, it may be instructive to see what commonalities there might be among studies which have used extended interaction behavior samples. As in this study, Greenwald (1977) found that eye contact was a valid cue for women. She also found, as did Glasgow and Arkowitz (1975), that talk time was a valid component, but this cue was not evaluated in this study. For men, personal attention (Kupke, Hobbs, & Cheney, 1979), frequency of silent periods (Arkowitz, Lichtenstein McGovern, & Hines, 1975), and the timing--but not frequency--of social reinforcement (Fischetti, Curran, & Wessberg, 1977) were found to be valid components in other studies but were not nominated for evaluation here. Barlow, Abel, Blanchard, Bristow, and Young (1977) found valid differences on three quasi-molar categories of heterosocial skill, the components of which were not evaluated individually. Of these components, loudness, eye contact, and laughter are similar to cues evaluated here, none of which were found to be valid. Clearly, there is only minimal convergence across studies in this area.

While the results of this study add to the breadth of other findings in indicating valid behavioral referents of molar heterosocial skill, and while these criterion-validated cues move us an important step beyond face valid responses as components of heterosocial skill, it is still necessary to demonstrate their experimental validity (as in Kupke, Calhoun, & Hobbs, 1979) and clinical utility. The method employed in this study clearly was able to identify behavioral referents of reliable peer ratings of molar heterosocial skill; the next logical step is to manipulate these components responses and evaluate their impact on molar heterosocial skill ratings and on in vivo social activity.

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Table 1

Behavioral Cues and the Number
of Raters Who Listed Each

Cues	Number of raters listing each cue	
	Male subjects (35 raters)	Female subjects (32 raters)
Eye Contact	25	19
Fidgeting	25	18
Questions	12	9
Too Quiet	12	6
Laughter	7	9
Initiation	4	12
Gestures	4	10
Gaze Down	8	5

Table 2

Regression Analysis for Male Subjects

Cues	R	increase in R^2	r	beta	F for beta
Gaze Down	.54	.29	-.54**	-.88	84.5**
Questions	.84	.42	.40*	.60	48.3**
Gestures	.91	.12	.44**	.35	17.9**
Fidgeting	.92	.01	-.15	.18	3.7
Laughter	.92	.02	-.10	-.14	2.8

*$p < .05$

**$p < .01$

Table 3

Regression Analysis for Female Subjects

Cues	R	increase in R^2	r	beta	F for beta
Gaze Down	.64	.40	-.64**	-.41	4.5*
Gestures	.70	.08	.20	.26	2.6
Eye Contact	.73	.04	.53**	.29	2.6
Too Quiet	.74	.02	-.34*	-.19	1.5
Laughter	.75	.02	.24	.15	0.9

*$p < .05$

**$p < .01$